

CLAIMS

We claim:

- [c1] 1. A method performed by a computer system for exchanging educational material in an adult, corporate learning environment, the method comprising:
- sending educational content to multiple, portable student computing devices from a central database associated with a server computing device, wherein the educational content is associated with at least a portion of a particular subject to be learned by multiple adult students in the corporate learning environment;
 - substantially concurrently and wirelessly sending an assessment or quiz relating to the educational content to the multiple portable student computing devices during an educational lesson;
 - wirelessly receiving results relating to the assessment or quiz from the multiple portable student computing devices during the educational lesson;
 - tabulating or aggregating the received results during the educational lesson, wherein the tabulated or aggregated results reflect how well the multiple adult students understood the educational content;
 - providing to a portable teacher computer the tabulated or aggregated results reflecting how well the multiple adult students understood the educational content during the educational lesson, and
 - when the tabulated or aggregated results indicate that at least some of the multiple adult students have not understood at least portions of the educational content, then
 - sending supplemental content complementing the educational content to the multiple portable student computing devices from the central database, wherein the supplemental

component relates to and reinforces at least portions of the educational content.

[c2] 2. The method of claim 1 wherein the portable student computing devices include portable digital assistants having short-range wireless communication transceiver or Internet-ready cellular telephones.

[c3] 3. The method of claim 1 wherein sending educational content is performed wirelessly.

[c4] 4. The method of claim 1 wherein providing to a portable teacher computer the tabulated or aggregated results is performed wirelessly.

[c5] 5. The method of claim 1 wherein sending supplemental content is performed wirelessly.

[c6] 6. The method of claim 1, further comprising receiving a request from one of the portable student computers for additional content related to an aspect of the educational content, and wirelessly providing the additional content to the one portable student computer.

[c7] 7. The method of claim 1 wherein the educational lesson is performed substantially concurrently among remote adult students in multiple geographically distinct locations.

[c8] 8. The method of claim 1, further comprising providing teacher tools to assist the teacher in creating an agenda for the educational lesson, creating study materials for use by the adult students before the educational lesson, and creating educational materials for use during the educational lesson.

[c9] 9. The method of claim 1 wherein the supplemental content is determined by evaluating context data related to the educational lesson, a task model relating to a task that the adult students are to perform related to the educational content and the educational lesson, and a user model relating to how individual adult students interact with the computer system.

[c10] 10. A method performed by a computer system for exchanging educational material, the method comprising:

- identifying a student operating a first portable computing device;
- selecting information relating to an educational component to send to the first portable computing device;
- adapting the selected information for presentation on the first portable computing device based on a size of a visual display device associated with the first portable computing device;
- wirelessly sending the adapted information to the first portable computing device;
- receiving an indication from the student relating to the sent information;
- storing the indication; and
- when the identified student operates a second computing device,
 - identifying information relating to the educational component based on the stored indication;
 - adapting the identified information for presentation on the second computing device; and
 - sending the identified information to the second computing device.

[c11] 11. The method of claim 10 wherein the wirelessly sending includes wirelessly and concurrently sending the adapted information to multiple portable computing devices during an educational lesson related to the educational component.

- [c12] 12. The method of claim 10 wherein the selecting includes identifying a context, a task model, and a user model.
- [c13] 13. The method of claim 10 wherein adapting the selected information for presentation on the first portable computing device includes considering a rendering capability of the first portable computing device.
- [c14] 14. The method of claim 10 further comprising receiving from the first computing device notes from the identified student, and storing the notes in a portion of the central database associated with the identified student.
- [c15] 15. The method of claim 10 wherein the indication from the identified student is a bookmark.
- [c16] 16. The method of claim 10 wherein the indication from the identified student is a question relating to the educational component.
- [c17] 17. The method of claim 10 wherein the indication is stored in a central database.
- [c18] 18. The method of claim 17 wherein an indication stored in the central database is available from a computer coupled to the Internet.
- [c19] 19. The method of claim 10 wherein the identifying includes authenticating the identified student.
- [c20] 20. A system for enabling mobile learning over at least one computer network, the system comprising:
a server computing device and associated central database for storing an educational component and a complementary educational

component, wherein the server includes a web-based front end for providing access to the stored educational component and complementary educational component;

a first mobile student computing device for presenting the educational component to a student and indicating an aspect of the educational component, the indication subsequently being stored on the server computing device; and

a second student computing device for presenting the complementary educational component based on the stored indication to the student, wherein the server, first, and second computing devices are configured to exchange information via the at least one network.

[c21] 21. The method of claim 20 wherein the educational component includes material for presentation by an instructor during class.

[c22] 22. The method of claim 20 wherein the complementary educational component is a quiz.

[c23] 23. The method of claim 20 wherein the complementary educational component is additional material relating to the educational component.

[c24] 24. The method of claim 20 wherein the indication is a bookmark.

[c25] 25. The method of claim 20 wherein the indication is an area a student wishes to review after class.

[c26] 26. A system for enabling mobile learning, the system comprising:
means for identifying a user operating a mobile computing device, the identifying including authenticating credentials supplied by the user;

means, coupled to the means for identifying, for receiving information from an instructional computing device, wherein the received information relates to an educational component;

means, coupled to the means for receiving, for presenting the received information on the mobile computing device; and

means, coupled to the means for presenting, for determining whether the received information indicates that an assessment is to be performed, and when an assessment is indicated, presenting the assessment;

collecting a response to the assessment; and

sending the response to the instructional computing device.

[c27] 27. The system of claim 26 including means for exchanging data with the instructional computing device.

[c28] 28. The system of claim 27 wherein when data is received from the instructional computing device indicating that the received information relating to the educational component is to be modified, and wherein receiving information includes receiving modifications to the educational component.

[c29] 29. The system of claim 28 wherein the indication to modify the educational component includes a real-time modification to the instructional component by an instructor.

[c30] 30. A computer-readable medium containing a data structure, the data structure comprising:

an educational component, wherein the educational component is created by an intelligent support engine that takes into consideration context data, a task model, and a user model;

a question relating to the educational component, wherein the question is designed to determine whether a student has understood the educational component; and
an answer to the question.

[c31] 31. The computer-readable medium of claim 30 wherein the educational component includes streaming media.

[c32] 32. The computer-readable medium of claim 30 including indications for proper presentation of the educational component.

[c33] 33. The computer-readable medium of claim 30 including indications for proper presentation of the educational component, wherein the indications are represented in XML.

[c34] 34. The computer-readable medium of claim 30 wherein the computer-readable medium is a memory of the telecommunications mobile device.

[c35] 35. The computer-readable medium of claim 30 wherein the computer-readable medium is a logical node in a computer network receiving the educational components.

[c36] 36. The computer-readable medium of claim 30 wherein the computer-readable medium is a computer-readable disk.

[c37] 37. The computer-readable medium of claim 30 wherein the computer-readable medium is a data transmission medium carrying a generated data signal containing the educational components.

[c38]

38. The computer-readable medium of claim 30 wherein the computer-readable medium is a memory of a computer system.